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ABSTRACT

Arkansas adult leaders (N=95) were surveyed to test the hypothesis that a cooperative extension service educational program would increase participants' knowledge of land use planning over that of a control group and would also affect attitudinal changes toward land use problems and policies. Nineteen respondents were selected from each of 5 counties in the West Central Arkansas Cooperative Extension Service District; from among the 19 leaders, 10 were chosen to attend a land use planning meeting and to complete a questionnaire at the meeting, and 9 were chosen not to attend the meeting but to complete a mailed questionnaire. The questionnaire included 11 attitudinal questions, 6 factual questions, and demographic questions. Results indicated: attendance at the meeting did not produce significant increases in the knowledge of participants over that of the control group; meeting participation did have an important effect on answers to three attitudinal items--increased favorability toward land use planning and preservation and regulation of agricultural land. (JC)

Evaluation of an Educational Program's Impact on Attitudes and Knowledge Related to Land Resource Management

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During the 1970's there have been an increasing number of social scientists interested in socially relevant research in the areas of ecological psychology and related public policy formation. There is increasing interest in how a person affects the environment as well as how the environment affects the person. This interest has developed largely with a realization that many of the problems related to the rapid population growth and technological development which have occurred in the United States within the past century have not been dealt with effectively. Those involved with public policy formation are increasingly aware that social and environmental factors must be considered, as well as economic and political factors (Coke & Brown, 1975; Goodwin & Tu, 1975; Ittelson, Proshansky, Rivlin, & Winkel, 1974; Otte, 1974).

Traditionally, the management of land resources has been left to the individual land-owner's discretion, with little or no governmental interference. However, with increasing public concern for the environment and a quality of life, management of land resources is currently a discussion topic at the federal, state, and local governmental levels. Several states, including Vermont, Florida, California, and Hawaii, have already adopted wide-scale land use planning (Beuscher, Wright, & Gitelman, 1976). The National Land Use Policy and Planning Assistance Bill introduced in the 93rd Congress, if passed, would have encouraged similar moves by all states (Timmons, 1972).

Arkansas has undergone some major changes within the last decade. Many areas in the state have had a rapid growth in population, primarily due to development of retirement, recreation, and manufacturing attractions. In major agricultural areas of the state, technological advances have reduced the need for agricultural labor, resulting in population losses (Arkansas Department of Planning, 1973). Changes in land use have accompanied the changes in population, with agriculture and forest land being converted to other uses, particularly in growing urban areas of the state.

Although Arkansas cities have had the authority to plan for land uses since the 1920's, and counties since the 1930's, the majority of them have not used that authority (Arkansas Department of Local Services, 1975; Witte, Solberg, & Martin, 1962). The state of Arkansas has no comprehensive land use planning program. Thus, experience with planning for changing land uses is limited.

[1] Paper presented at the 74th Annual Meeting of the Southern Association of Agricultural Scientists, Atlanta, Georgia, February 6-9, 1977.

The basic change in governmental policy toward increasing supervision, regulation, and control of land resources, as has occured in several states, has met with mixed reactions in Arkansas (Governor's Advisory Committee, 1974). In addition, a recent statewide survey found that public familiarity with land use planning concepts is low (Jackson, Danforth, Hudson, & Voth, 1976). That survey also found a high degree of indecision regarding land use planning, although more favored than opposed the idea. Land use planning thus appears to be a relatively new idea to Arkansas residents, one about which many people are unsure.

The Cooperative Extension Service, which is the educational branch of the U.S. Department of Agriculture, has expanded its program to meet the needs of a changing rural clientele and the changing patterns of land use by an increased educational effort in community resource development and land use planning in Arkansas (Bates, 1975). Its state-wide land use planning educational program was conducted in two stages. The first stage included general land use planning education in the counties, and the second stage involved educating county leaders in the organizational and operational processes of land use planning. The second stage of the program, which is the topic of this research, was implemented by holding informational meetings to which county leaders were invited.

Programs for leaders are a characteristic educational approach of the Cooperative Extension Service (Extension Committee on Organization and Policy, 1966). This approach is based on a diffusion model of technological innovation long used by agriculturists (Rogers & Burdge, 1972, Chap. 13). As described by Rogers (pg. 373), "the main elements in the diffusion of new ideas are: the innovation, which is communicated through certain channels, over time, among the members of a social system. An innovation is an idea, practice or object perceived as new by an individual." According to this model, change agents work through opinion leaders and thereby bridge the gap with their clients. Based on the above definition, land use planning as a process can certainly be conceptualized as an innovation in the state of Arkansas. Wide-scale land management is a fairly new idea to this country; and within Arkansas, planning options have not been widely exercised, nor is the general public familiar with the idea.

Although it would be of considerable interest to assess the effectiveness of the diffusion model in predicting the formation and acceptance of social and environmental policies, the required longitudinal research approach was beyond the scope of this study. However, it was possible to assess the impact of the second stage of the Cooperative Extension Service's educational program on the formation or change of attitudes toward the idea of land use planning, and on knowledge about the processes involved, as applied to the leaders themselves.

A need for social science studies of the impact of knowledge on orientation toward social policy is presented by Goodwin and Tu (1975) in a discussion of possible causal models as alternative approaches to more traditional correlational models in studies of support for public policy. In a study of attitudes and knowledge concerning ecological issues, high levels of concern and verbal committment were reported among all population groups, but very few facts about ecology were known (Maloney & Ward, 1973; Maloney, Ward, & Braucht, 1975). The authors concluded that high concern but little knowledge about ecological issues indicates a critical need for educational programs.

With environmental issues of increasing interest to public policy-makers and the general public, an opportunity to assess the impacts of such educational programs as the Cooperative Extension Service's on its participant leaders attitudes and knowledge about land use planning is important in gaining insight into the educational process.

This research project evaluated the impact of the Cooperative Extension Service educational program on participants' attitudes toward and knowledge of aspects of land use planning and resource management. It was hypothesized that the meeting would increase participants' knowledge of land use planning over that of a control group and that it would effect some change in the participants' attitudes toward aspects of land use problems and policies.

Methodology

Design. The experimental design provided for one group which would attend a meeting and be given a questionnaire to complete at the meeting's end, and one group which would be mailed a questionnaire to complete the week of the meeting. Campbell and Stanley (1963) refer to this as a posttest only-control group design. Since random assignment was used to equalize the two groups, this design eliminated any effects due to a pretest, and had internal validity.

Procedure. The program to be evaluated was a meeting sponsored by the Cooperative Extension Service (CES) in conjunction with the University of Arkansas Department of Agricultural Economics and Rural Sociology. The five hour meeting was held in Russellville, Arkansas, on March 30, 1976, beginning at 4:00 P.M. It was scheduled with speakers on different aspects of land use planning, with a 1 1/2 hour break for a meal in the middle.

The first half of the meeting consisted of a slide presentation of land use planning issues which was accompanied by a prepared script.1/ The humanistic aspects of these issues were then discussed by a panel of University of Arkansas faculty from the departments of law, sociology,

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1/ The slide series was developed by the Extension Committee on Organization and Policy, and modified under the direction of William S. Bonner, Chairman, Division of Community Affairs, University of Arkansas, Fayetteville.

philosophy, and English. A open discussion session followed the presentations.

The second half of the meeting consisted of panel presentations by a group from Crittenden County, Arkansas, on the development and administration of their county-wide land use planning program. A second discussion session was then held. At this time the questionnaires were distributed, instructions were read by the discussion moderator, and anonymity was assured. The completed questionnaires were then left on the tables and collected after the meeting.

The people in the control group were mailed a questionnaire with a postage-paid, self-addressed envelope enclosed. This mailing was done the week of the meeting by the county CES agents.

Subjects. Ninety-five adult county leaders were selected for inclusion in the sample. Nineteen leaders were selected from each of the five counties in the West Central Arkansas Cooperative Extension Service District; Conway, Pope, Johnson, Yell and Perry Counties. This district was chosen for the study because of prior plans by the CES to hold a land use planning meeting there.

Leaders were identified and a list compiled by the county and area CES agents, as is their customary procedure. These leaders were businessmen, professionals, farmers, and others who were considered by the CES as leaders in county affairs.

The 95 leaders were assigned to groups by a randomized block procedure (Cox, 1958): ten of the leaders from each county were chosen to attend and complete a questionnaire at the meeting (experimental group), and nine were chosen not to attend, but to complete a mailed questionnaire (control group). County judges and county CES personnel were also invited to the meeting by request of the CES, but were not included in the study sample because all were invited to attend.

Materials. The program was evaluated by a self-administered questionnaire. The questionnaire was designed to assess attitudes toward aspects of land use planning and knowledge of present Arkansas land use policies, to collect demographic characteristics of the participants, and to assess participants' evaluation of the program. The contents of the questions were taken from the CES's program presentation materials, land use planning materials developed by the Extension Committee on Organization and policy, 2/ planning guidelines and materials prepared by the University of Arkansas Division of Community Affairs, and from a questionnaire designed by staff of the University of Arkansas Department of Agricultural Economics and Rural Sociology to assess land use planning attitudes in Arkansas.

2/ These materials included three companion leaflets on land use planning: "Issues in Land Use", "The Citizen's Role in Land Use Policy," and "Instruments for Shaping Land Use Policy."

The attitudinal questions measured favorability toward land use planning in general, public versus private rights in land use control, preservation and control of agricultural land, and preservation and conservation of the environment. The factual items related to Arkansas land use policies, including some items which were assumed to be widely known and others which were more technical in nature.

The questionnaire format consisted of a brief instruction page, 11 attitudinal questions answered on a five-point Likert scale, six factual questions answered as true-false-don't know, and demographic questions. In addition, for those attending the meeting, ratings of the program were requested, while those not attending the meeting were asked questions concerning what types of information about land use planning would be of interest to them.

A form of this questionnaire was administered as a pilot at a CES land use planning meeting in Mena, Arkansas, June 26, 1975. The questionnaire was revised on the basis of suggestions by the participants, by eliminating items with highly skewed distributions, and by eliminating items on which the no response rate was high.

This revised form was tested in five public meetings on land use planning funded by an Arkansas Humanities Council Grant. One meeting was held in each of Madison, Franklin, Carroll, Benton, and Washington Counties in the fall of 1975. Revisions were made, as above, on the basis of feedback from those completing the questionaire.

Results

Although random assignment to treatment group was central to the design, perfect control of assignment unfortunately was not achieved. Some of those who had been assigned to the control group heard of the meeting and attended, while some of those who had been assigned to attend the meeting were unable to come. This resulted in a reduction in each group. Therefore, regardless of their original assignment, all those in the sample who attended the meeting were asked to complete a questionnaire at the meeting and all those in the sample who did not attend the meeting were asked to complete a mailed questionnaire.

To secure a high response rate from the mailed questionnaire, a series of follow-ups to the initial mailing by the CES was conducted from the University of Arkansas using a method developed by James A. Christenson (1974). When the daily response rate from the initial mailing dropped to one percent, a postcard reminder was sent for all non-returned questionnaires. When the daily response rate again dropped to one percent, a second copy of the questionnaire was sent. Christenson's method also employs a third mail follow-up, but in this study, responses to the second follow-up were so few that the third was dropped. Seventy-four percent of the leaders contacted by mail responded. The number of returned questionnaires per mailing for leaders in each county, as well as the number in each county who completed questionnaires at the meeting, are presented in Table 1.

Table 1
Number of Questionnaires From Each County
Completed Per Mailing and at the Meeting

County	Mailing			Meeting	No response
	Initial mailing	First follow-up	Second follow-up		
Conway	6	2	0	9	2
Johnson	5	1	0	4	9
Perry	4	4	0	9	2
Pope	9	0	0	8	2
Yell	5	2	1	8	3
Total	29	9	1	38	19

Note: The mailed questionnaire was completed by 39 (74%) of the 53 leaders contacted. A questionnaire was completed at the meeting by 38 (90%) of the 42 leaders attending.

The questionnaires completed at the meeting were both from leaders assigned to attend the meeting and from those assigned to complete the mailed questionnaire. The same is true of the completed mailed questionnaires. Therefore each group is divided into subgroups by original assignment as follows: (1) C-C group--assigned to control group, remained in control group (29 leaders), (2) E-C group--assigned to experimental group, moved to control group (10 leaders), (3) C-E group--assigned to control group, moved to experimental group (10 leaders), (4) E-E group--assigned to experimental group, remained in experimental group (28 leaders). These groups will sometimes be considered independently in analysis, and will sometimes be combined.

For each attitudinal, factual, and demographic question, a t-test for difference in group means was performed.3/ In these analyses, the C-C and E-C groups were combined, and the C-$\bar{E}$ and E-E groups were combined. Thus, the differences to be tested are between all those who attended the meeting (meeting group), and all those who completed the mailed questionnaire (mailing group). This provides a liberal test of meeting effects, since the effects of selectivity of leaders due to the crossovers (C-E and E-C subgroups) are not examined or controlled.

On demographic characteristics, 2-tail t-tests resulted in no significant differences. Thus, the selectivity of respondents to control

3/ The t-tests were performed using the subprogram "T-TEST" provided by Nie, N. H., Hull, C. H., Jenkins, J. G., Steinbrenner, K., & Bent, D. H. Statistical package for the social sciences. McGraw-Hill, Inc. 1975

and experimental groups did not result in a large difference in composition of the two groups. Using the two groups for comparison of meeting effect therefore has some validity.

It was hypothesized that the meeting would have an effect on attitudes toward land use planning. Since the direction of effect was not specified, the t-tests were performed using a 2-tail test of significance.

On four of the 11 attitudinal items, significant differences were obtained. All of these differences were in the direction of increased favorability toward land use planning and land use control for those who attended the meeting (Table 2). On the issue of land use planning and land use regulation in general, those who attended were more likely to favor land use planning and less likely to think the landowner should be unrestricted by regulation. Other interesting differences occurred in attitudes toward regulation of agricultural land: those who attended the meeting were more likely to think that good agricultural land should be preserved through regulation, and less likely to think land use planning puts too many restrictions on farmers.

An increase in knowledge about land use planning was also hypothesized for those attending the meeting. Therefore, the t-tests were conducted using a one-tail test of significance. On two of the six factual items, siginificant differences in the expected direction were obtained (Table 3).

An attempt to control for and examine the effects of selectivity to groups was made using a multiple regression approach. The effects of demographic characteristics were controlled while examining the effect of group assignment; thus, any differences in group composition resulting from selectivity should be controlled. Demographic characteristics, as well as assignment group, were included as independent variables in the model, with assignment group separated into four subgroups (C-C, E-C, C-E, and E-E groups). Entering the C-E and E-C subgroups independently allowed their separate effects on the dependent variables to be estimated, thereby providing at least partial examination of the effects of the crossovers.

Each attitudinal and factual item was entered as a dependent variable in the following regression model: attitudinal or factual question = age, education, retirement status, ownership of land used for business or industry, ownership of agricultural land, ownership of land with housing development, ownership of land for "other" uses, occupation as a farmer, E-E group, C-E group, E-C group.4/ As indicated, the C-C group was excluded from the model to prevent its being over-determined. Thus the C-C group provides the comparison for the effects associated with the three groups included in the model.

4/ The regression analyses were performed using the "General Linear Models" procedures provided by Barr, A. J., Goodnight, J. H., Sall, J. P., & Helwig, J. T. A user's guide to SAS 76. Raleigh, N.C.: Sparks Press, 1976.

In the regression solution, each effect was tested with all other effects held constant. A person who had a missing value for any variable included in the model was excluded from the analysis.

Table 2
Results of t-tests on Attitudinal Items for Differences in Mailing and Meeting Group Means

Attitudinal item	Mean[a/] Mailing	Mean[a/] Meeting	Value of t	df
New regulations are needed or we will have serious problems of pollution.	3.4 (36)	3.8 (37)	-1.55	71
Public spending and regulations are needed so that more people will have parks and playgrounds to use.	3.4 (37)	3.5 (38)	-0.63	73
Land use planning puts too many restrictions on farmers in the use of their land.	3.4 (37)	2.3 (35)	3.86***	70
The public should have the right to set aside land for a necessary use (parks, agriculture, etc.) even if it prevents the landowner from making a profit by selling to developers.	2.2 (37)	2.4 (37)	-0.56	72
Good agricultural land should be regulated to prevent its being used for housing or other development.	3.1 (36)	3.8 (36)	-2.53*	70
There should be controls on population growth in certain areas by limiting the number of new houses built, or by other means.	3.4 (37)	3.7 (38)	-1.24	73
Regulations should not prevent the landowner from doing what he pleases with his land.	3.5 (36)	2.9 (37)	2.28*	71
There should be regulations to limit landowners in clearcutting timber along scenic highways of the state.	3.1 (36)	2.6 (35)	[illegible].52	69
Land use planning is government intervention in private affairs.	3.3 (36)	2.9 (36)	1.19	70
The government should buy land to leave in its natural state (wilderness areas, etc.) for present and future uses.	3.8 (35)	3.3 (35)	1.69	68
I am in favor of land use planning.	3.1 (37)	4.0 (37)	-3.56**	72

[a/]Response scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree.

Numbers in parentheses indicate the number of leaders in each group.

*p<.05
**p<.01
***p<.001

Table 3
Results of t-tests on Factual Items for
Differences in Mailing and Meeting Group Means

Factual item	Mean[a] Mailing	Mean[a] Meeting	Value of t	df
"Fee simple ownership" gives the landowner the right to do almost anything he pleases with his land.	0.4 (35)	0.2 (34)	0.80	67
Cities do not have the legal right to control growth and development outside their boundaries.	0.1 (37)	0.4 (37)	-1.33	72
Present Arkansas laws do not permit cities or counties to do joint planning on a regional basis.	-0.5 (37)	-0.9 (36)	2.20*	71
Arkansas cities have the legal right to zone or otherwise control the use of land within their boundaries.	0.9 (36)	0.9 (38)	-0.05	72
County judges have the authority to enact county-wide controls on land development	-0.5 (36)	0.1 (37)	2.99**	71
Before any county zoning regulations on land use are adopted, a public hearing must be held.	0.9 (37)	0.9 (38)	-0.03	73

[a]/Response scale: 1= true, 0 = don't know, -1 = false.

Numbers in parentheses indicate the number of leaders in each group.

*$p < .05$
**$p < .01$

With the effects of individual characteristics controlled in the multiple regression analyses, group assignment had a significant effect on three attitudinal items and on no factual items.

On the item, "I am in favor of land use planning," group assignment was one of four significant effects. Both the E-E and the C-E groups had significant positive effects compared to the C-C group, while the E-C group did not. Thus, accounting for the effects of demographic characteristics, those who attended the meeting still were more favorable toward land use planning than those who did not attend. With all other effects controlled, age had a significant positive slope on favorability, while ownership of land for housing development and occupation as a farmer had significant negative slopes.

Group assignment was the only significant effect on two items regarding attitude toward regulation of agricultural land. Among groups, the E-E group had the only significant effect compared with the C-C group. Accounting for the effects of demographic characteristics, those in the E-E group were more likely than those in the C-C group to think that good agricultural land should be preserved through regulation, and less likely to think land use planning puts too many restrictions on farmers. Apparently, selectivity to groups had an important influence on attitudes toward regulation of agricultural land: neither those in the C-E group nor those in the E-C group were significantly different in favorability from the C-C group.

The means associated with each subgroup for the above dependent variables are presented in Table 4 and the results of the multiple regression analyses for those variables are presented in Table 5.

Table 4
Group Means for Attitudinal Items on
Which Group Assignment has a Significant Effect

Attitudinal item	Mean[a/] C-C group	E-C group	C-E group	E-E group
I am in favor of land use planning	2.9 (28)	3.8 (9)	3.9 (10)	4.0 (27)
Good agricultural land should be regulated to prevent its being used for housing or other development.	3.0 (27)	3.3 (9)	3.5 (10)	3.9 (26)
Land use planning puts too many restrictions on farmers in the use of their land.	3.5 (28)	3.1 (9)	2.7 (9)	2.2 (26)

[a/] Response scale: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree.
Numbers in parentheses indicate the number of leaders in each group.

Table 5
Multiple Regression Analysis Results for Attitudinal Items on Which Group Assignment had a Significant Effect

Independent variable	Attitudinal item: Favor land use planning[a] b	t value	Regulate agricultural land[b] b	t value	Land use planning restricts farmers[c] b	t value
Intercept	1.99	2.34*	2.20	1.91	3.44	3.30**
Age	0.28	2.29*	0.31	1.88	-0.10	0.65
Education	0.03	0.61	-0.01	-0.20	0.03	0.52
Retirement status	-0.25	-0.49	-0.66	-0.94	0.22	0.35
Own business or industry land	0.23	0.69	-0.23	-0.53	-0.29	-0.72
Own agricultural land	-0.38	-1.28	0.02	-0.05	0.09	0.25
Own housing development land	-0.93	-2.16*	-0.22	-0.38	-0.35	-0.66
Own land for "other" use	0.08	0.20	-0.35	-0.67	-0.50	-1.05
Occupation as farmer	-0.72	-2.40*	-0.47	-1.15	-0.07	-0.18
Group[d]						
E-C	1.08	3.81***	1.09	2.84**	-1.24	-3.58***
C-E	0.95	2.50*	0.60	1.17	-0.67	-1.45
E-C	0.48	1.22	0.39	0.75	-0.41	-0.85

[a] $R^2 = .43$, $df = 65$.

[b] $R^2 = .21$, $df = 64$.

[c] $R^2 = .27$, $df = 64$.

[d] The C-C subgroup was excluded from the model to prevent its being over-determined; thus, it provides the comparison for effects associated with the three subgroups included.

*$p < .05$
**$p < .01$
***$p < .001$

Even with the effects of demographic characteristics controlled, the significant meeting effects might have been due to selectivity involved in the C-E and E-C groups. Therefore, a more conservative test of significance was conducted for the three attitudinal questions on which group had a significant effect. T-tests were again performed, but the groups were combined by original assignment, rather than by actual participation as in the first analysis. Thus, the C-E and C-C groups were combined and the E-C and E-E groups were combined. Hence, all those originally assigned to the experimental group were considered as one group, even though ten had not actually participated in the program. Conversely, all those originally assigned to the control group were considered as one group, even though ten of them actually participated in the program.

Even with this combination of subgroups, significant differences in group means were obtained for the above three attitudinal items. Clearly, these differences not only can be attributed to program effects, but also are a biased estimate which under-estimated real differences. Therefore, the meeting is concluded to have a real effect on some attitudes toward land use planning and the regulation of agricultural land, but not on knowledge of land use planning facts.

On questions directly concerning the meeting, over 97 percent of those attending said that the program held their interest, that it increased their knowledge of land use planning, and that they would recommend attendance at such a program to their friends. Perhaps the most informative answers regarding the program were obtained to the question, "What part of the program did you like best?" Forty-one percent stated no preference, 6 percent preferred the first half of the meeting, and a majority of 53 percent preferred the second half of the meeting. As discussed earlier, the first half of the meeting provided information and discussion on land use planning issues, while the second half provided information and discussion on personal experiences involved in the development and administration of an operating land use planning system.

Among those who did not attend the meeting, 87 percent thought land use planning is an important issue for discussion in their counties.

Two other questions identified what types of information would interest the leaders, and in what forms that material should be made available by the CES. As is shown in Table 6, information about Arkansas land use laws and policies was of the most potential interest to the leaders, with information about land use issues having the second most interest. The highest number of leaders wanted the CES to make the information available at public meetings, and the second most popular form was in a newsletter (Table 7).

Summary and Discussion

An increase in program participants' knowledge about land use planning over that of a control group was hypothesized. Analyses of group means yielded significant differences on only two out of six factual items. As shown in further analyses, these differences were accounted for by demographic

characteristics of the leaders, rather than by effects associated with the meeting itself. Therefore, the hypothesis of increased knowledge is rejected: attendance at the meeting did not result in significant increases in knowledge of participants over those in a control group.

Table 6
Percentages of the Control Group Expressing Interest in Different Type of Land Use Planning Information

Information type	Percentage
Present land use laws and policies in Arkansas	78
Land use planning issues	73
Present land use laws and policies in other states	51
Where to obtain specialized information and help with land use planning	32
N of cases	37

Table 7
Percentages of the Control Group Expressing Interest in Different Forms of Land Use Planning Information

Information form	Percentage
Public meeting	67
Newsletter	58
Information upon request at office	44
Newspaper articles	39
Television programs	19
N of cases	36

A difference in attitudes toward land use planning was also hypothesized for program participants as compared to a control group. In analyses of group means, significant differences were obtained on four out of 11 attitudinal items. On only one item did demographic characteristics of the leaders account for these differences. Thus, meeting participation had an important effect on answers to three attitudinal items, even with demographic effects controlled. The differences that occurred were increased favorability toward land use planning, and toward preservation and regulation of agricultural land, for those who attended the meeting. That these differences were real effects of the meeting is substantiated by significant differences between groups obtained using a conservative test, one which under-estimated the meeting effects. The hypothesis of attitudinal differences is thus accepted: attendance at the meeting resulted in significantly more favorable attitudes toward land use planning and agricultural regulation for participants over those in a control group.

From these results, the major impact of the CES's educational program on land use planning appears to be that of increasing favorability toward land use planning and regulation, rather than that of increasing factual knowledge of land use policies for participating leaders.

Increasing favorability toward a new idea may be a necessary step in the educational process. In the diffusion model which guides the CES's educational program, the innovation is introduced to the opinion leaders of a community. Establishing some positive feelings in these leaders toward an idea could facilitate effective dissemination of information concerning the idea. As Maloney and Ward (1973) had concluded, a high concern for problems indicates a fertile ground for educational efforts.

One would expect, however, some increase in knowledge of land use planning facts associated with meeting participation. That effect was not found in this study. Still, those not attending the meeting indicated high interest in obtaining information on Arkansas land use laws and policies, and meeting participants preferred the part of the meeting which related actual experiences in land use planning. In addition, those not attending the meeting most wanted information from the CES in public meetings and newsletters, indicating they wish the CES to take an active part in land use planning education. Thus, the fertile ground for land use planning educational efforts by the CES seems to be prepared.

An increase in factual knowledge did not result from the meeting. Thus, a need is indicated for more purely factual content in meetings of this type. The effectiveness of educational programs in increasing knowledge seems especially important when working with a population of leaders, particularly if one assumes that they play an active role in the formation and acceptance of public policy. Perhaps a third stage in the CES's educational program is in order to further the dissemination of facts concerning land use planning to Arkansas residents.

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